AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A method for producing an antibody fragment, comprising the steps of:

1) preparing an expression vector comprising a gene encoding a light chain of the antibody fragment fused with *E. coli* thermostable enterotoxin signal sequence derivative and a gene encoding a heavy chain of the antibody fragment fused with ~~a second~~ *E. coli* outer membrane protein A signal sequence, wherein the expression of the genes encoding the light chain and the heavy chain is regulated by a single promoter;

2) transforming a microorganism with the expression vector;

3) culturing the transformed microorganism in a medium; and

4) collecting the antibody fragment secreted from the transformed microorganism into the medium.

2. (Original) The method of claim 1, wherein the antibody fragment is derived from a chimeric antibody, a humanized antibody or a human antibody.

3. (Original) The method of claim 1, wherein the antibody fragment is selected from the group consisting of Fab, Fab', $F(ab')_2$ and scFv.

4. (Currently amended) The method of claim 1, wherein the *E. coli* thermostable enterotoxin signal sequence derivative has the nucleotide sequence of SEQ ID NO: 17 and the *E. coli* outer membrane protein A signal sequence has the nucleotide sequence of SEQ ID NO: 23 ~~wherein each of the first and the second *E. coli* signal sequences is selected from the group consisting of *E. coli* thermostable enterotoxin signal sequence, outer membrane protein A signal~~

~~sequence, β-lactamase signal sequence, Gene III signal sequence, PelB signal sequence and a derivative thereof~~.

5. (Currently amended) The method of claim 1, wherein the promoter is T7 promoter or Tac promoter~~The method of claim 4, wherein each of the first and the second *E. coli* signal sequences is the *E. coli* thermostable enterotoxin signal sequence derivative having the nucleotide sequence of SEQ ID NO: 17 or the *E. coli* outer membrane protein A signal sequence having the nucleotide sequence of SEQ ID NO: 23~~.

6. (Currently amended) The method of claim 1, wherein the antibody fragment is a fragment of anti-tumor necrosis factor-alpha~~The method of claim 5, wherein each of the genes encoding the light chain and the heavy chain is fused with the *E. coli* thermostable enterotoxin signal sequence derivative, and a single promoter regulates the expression of the genes encoding the light chain and the heavy chain~~.

7. (Currently amended) The method of claim 1, wherein the expression vector is pmsoDLHF_N/S~~The method of claim 5, wherein each of the genes encoding the light chain and the heavy chain is fused with the *E. coli* outer membrane protein A signal sequence, and a single promoter regulates the expression of the genes encoding the light chain and the heavy chain~~.

8. (Currently amended) The method of claim 1, wherein the microorganism is *E. coli* ~~The method of claim 5, wherein the gene encoding the light chain is fused with the *E. coli* thermostable enterotoxin signal sequence derivative, the gene encoding the heavy chain is fused with the *E. coli* outer membrane protein A signal sequence, and a single promoter regulates the expression of the genes encoding the light chain and the heavy chain~~.

9. (Currently amended) The method of claim 8, wherein the microorganism transformed with the expression vector is *E. coli* BL21/pmsoDLHF_N/S(HM10924) (KCCM-10513) ~~The method of claim 5, wherein the gene encoding the light chain is fused with the *E. coli* outer membrane protein A signal sequence, the gene encoding the heavy chain is fused with~~

~~the *E. coli* thermostable enterotoxin signal sequence derivative, and a single promoter regulates the expression of the genes encoding the light chain and the heavy chain~~.

10. (Currently amended) An expression vector comprising a gene encoding a light chain of the antibody fragment fused with *E. coli* thermostable enterotoxin signal sequence derivative and a gene encoding a heavy chain of the antibody fragment fused with *E. coli* outer membrane protein A signal sequence, wherein the expression of the genes encoding the light chain and the heavy chain is regulated by a single promote, and the antibody fragment expressed from the expression vector is secreted into a culture medium~~The method of claim 5, wherein each of the genes encoding the light chain and the heavy chain is fused with the *E. coli* outer membrane protein A signal sequence, and two promoters independently regulate the expression of the genes encoding the light chain and the heavy chain~~.

11. (Currently amended) The expression vector of claim 10, wherein the antibody fragment is derived from a chimeric antibody, a humanized antibody or a human antibody~~The method of any one of claims 6 to 10, wherein the promoter is T7 promoter or Tac promoter~~.

12. (Currently amended) The expression vector of claim 10, wherein the antibody fragment is selected from the group consisting of Fab, Fab', $F(ab')_2$ and scFv~~The method of claim 1, wherein the antibody fragment is a fragment of anti-tumor necrosis factor-alpha~~.

13. (Currently amended) The expression vector of claim 10, wherein the *E. coli* thermostable enterotoxing signal sequence derivative has the nucleotide sequence of SEQ ID NO: 17 and the *E. coli* outer membrane protein A signal sequence has the nucleotide sequence of SEQ ID NO: 23~~The method of claim 1, wherein the expression vector is selected from the group consisting of psDLHF_B, psDLHF_Bp, poDLHF, poDLHF_B/S, pmsoDLHF_N/S and pmsoDLHF_S/K~~.

14. (Currently amended) The expression vector of claim 10, wherein the antibody fragment is a fragment of anti-tumor necrosis factor-alpha ~~The method of claim 1, wherein the microorganism is *E. coli*~~.

15. (Currently amended) The expression vector of claim 10, wherein the promoter is T7 promoter or Tac promoter ~~The method of claim 14, wherein the microorganism transformed with the expression vector is selected from the group consisting of *E. coli* BL21(DE3)/psDLHF_B(HM10920) (KCCM-10509), *E. coli* BL21(DE3)/psDLHF_BP(HM10921) (KCCM-10510), *E. coli* BL21/poDLHF(HM10922) (KCCM-10511), BL21/poDLHF_B/S(HM10923) (KCCM-10512), *E. coli* BL21/pmsoDLHF_N/S(HM10924) (KCCM-10513) and *E. coli* BL21/pmsoDLHF_S/K(HM10925) (KCCM-10516)~~.

16. (Currently amended) The expression vector of claim 15, which is pmsoDLHF_N/S~~An expression vector comprising a gene encoding a light chain of an antibody fragment fused with a first *E. coli* signal sequence and a gene encoding a heavy chain of the antibody fragment fused with a second *E. coli* signal sequence, wherein the antibody fragment expressed from the expression vector is secreted into a culture medium~~.

17. (Currently amended) A microorganism transformed with the expression vector of claim 10~~The expression vector of claim 16, wherein the antibody fragment is derived from a chimeric antibody, a humanized antibody or a human antibody~~.

18. (Currently amended) The microorganism of claim 17, which is *E. coli* ~~The expression vector of claim 16, wherein the antibody fragment is selected from the group consisting of Fab, Fab', $F(ab')_2$ and scFv~~.

19. (Currently amended) The microorganism of claim 18, which is *E. coli* BL21/pmsoDLHF_N/S(HM10924) (KCCM-10513) ~~The expression vector of claim 16, wherein each of the first and the second E. coli signal sequences is selected from the group consisting of~~

~~E. coli thermostable enterotoxin signal sequence, outer membrane protein A signal sequence, β-lactamase signal sequence, Gene III signal sequence, PelB signal sequence and a derivative thereof~~.

Claims 20-43 (Cancelled)